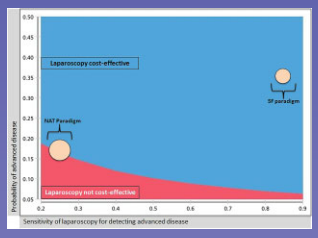
Highlights in this issue

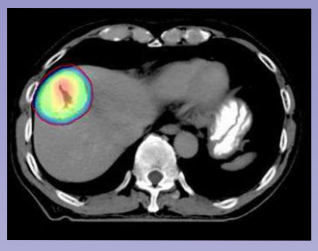


Jayakrishnan *et al*., p. 131

A new look at a familiar question

What is the optimal technique for pancreatic anastomosis following pancreaticoduodenectomy (PD)? While this question is not new, it remains important since clinically-relevant post operative pancreatic fistulae (PF) still drive most PD-associated morbidity and mortality. For the contest of pancreaticojejunostomy (PJ) versus pancreaticogastrostomy (PG), we have plenty of analyses to consider. These range from observational studies through to randomized controlled trials (RCTs). We have five available systematic reviews and meta-analyses which collectively fail to identify a significant benefit in terms of PF for either technique. Why then is *HPB* publishing yet another meta-analysis on this question? For me, the reasons emerged upon careful review of the study by *Hallet, et al.* of Toronto. Four RCTs with 676 patients were analyzed after meeting explicit eligibility criteria. Two of these were only recently reported (*Topol* 2013, *Figueras* 2013) and absent from prior meta-analyses. One older but important RCT (*Yeo* 1995) was excluded, presumably as it could not meet the criteria of using the ISGPF fistula definition established in 2005. Opinions about that may vary. Nevertheless, *Hallet et al.* can be proud of the rigor and purpose of their analysis. They expose and educate as to the weaknesses of prior meta-analyses, and use sound methodology for a best new look at this familiar question. We learn of the CONSORT statement, the GRADE system to evaluate overall evidence strength, and the Fragility Index for a given RCT. In terms of the primary outcome of PF, pancreaticogastrostomy (PG) took the prize, but only by a small margin and upon evidence of moderate strength. PG and PJ were equivalent for several secondary outcomes as you'll see. As I noted last month in *HPB*, pancreatic surgeons should use their preferred best technique to achieve the best outcomes for their patients.

Mark Callery



Jacob *et al*., p. 140

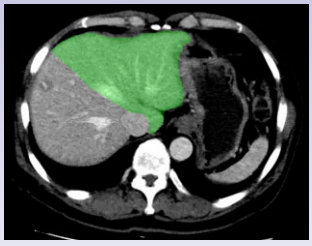
R1 margin in colorectal liver metastases (CRLM): a technical failure or marker of disease biology?

Obtaining an R0 margin has been considered a cornerstone principle of cancer surgery since Halstead's pioneering work on radical mastectomy. Transitioning to a less aggressive surgical approaches as adjuvant therapies improved required "thought leaders" to change surgical dogma. A recent personal observation at international HPB conferences has been the move away from the concept of neoadjuvant chemotherapy for CRLM by modern day HPB "thought leaders". In this issue of *HPB, Truant et al.* add to the debate of the role of neoadjuvant therapy in those with adverse prognostic factors.

They provide a large data series with a detailed statistical analysis of patients undergoing liver resection for CRLM with perioperative chemotherapy. Of the 273 patients studied, 59 (22%) were reported as having an R1 (<1 mm) margin. Although margin status appeared a significant prognostic factor on univariate analysis, it did not remain significant once patients were matched by propensity scoring or analysed by multivariate analysis. In studying the data, it is clear that those patients who had R1 margins had more advanced or biologically aggressive tumours. In addition surgical margin recurrence was rarely a determining factor in outcome. A total of 184 (67%) developed recurrence with only 22 (8%) patients developing margin recurrence. Thus the development of distant disease was what determined long term survival. The authors provide a number of possibilities for the lack of effect of R0 margin but strongly advocate from their data that perioperative chemotherapy should be considered as standard practice for patients with CRLM.

So what should a surgeon take from this paper? Firstly we must still strive for R0 margin. Chemotherapy cannot overcome poor surgery especially in those patients with favourable disease. The accurate assessment of margin status remains problematic due to hepatic parenchymal transection techniques. In those patients with adverse prognostic factors associated with CRLM the role of perioperative chemotherapy would appear to remain an important co-contributor to improving outcomes.

Saxon Connor



Kim *et al*., p. 159

Making sense of the liver volume/function relationship in health and disease will lead to safer liver surgery

CT scan based liver volume analysis has become a standard technique for complex or extended liver resections as a means of estimating likelihood of liver failure and improving patient safety. Volume analysis of the predicted future liver remnant is known to work well for patients with normal or near normal liver function with predicted minimum liver volumes of around 25%, reliably avoiding post-operative liver failure. Where volume analysis falls down is in patients with abnormal liver function and particularly cirrhosis. The problem is essentially that the liver function can be highly variable at the dysfunctional end of the scale and the volume function relationship becomes unpredictable.

Kim and colleagues from South Korea have presented an analysis combining conventional hepatic volumetry with retention of indocyanine green (ICG) at 15 minutes. In this study, they have confirmed that in healthy liver, volume measurement alone can reliably identify patients at risk of developing post operative liver failure. In patients with underlying liver disease or cirrhosis, expressing the future liver remnant volume in relation to the ICG15 retention time also provided a clear cut off value that identified a safe level at which resection could proceed. This ratio of future liver remnant volume to ICG15 was >1.9. This therefore provides a useful and practical approach to estimate patient safety in patients undergoing major resection. Patients with healthy liver probably only need to undergo volume analysis and if the future liver remnant is greater than 25%, resection can proceed. Those with cirrhosis or marked fibrosis should undergo both volume analysis and measurement of ICG retention at 15 minutes. If the ratio of these measurements (FLR : ICG15) is >1.9, resection can proceed safely but if less than this then a modified approach should be used or there will be a significant risk of liver failure.

Stephen J. Wigmore